CLAIMS

We claim:

1. An isolated protein comprising twelve or more contiguous conserved amino acids of an NhhA polypeptide, wherein said isolated protein is not a wild-type NhhA polypeptide.

2. The isolated protein of claim 1 which is capable of eliciting an immune response.

3. The isolated protein of claim 2, wherein the immune response is less strain-specific than that elicited by a corresponding said NhhA polypeptide.

4. The isolated protein of claim 3, wherein said immune response provides protection against one or more strains of *N. meningitidis*.

5. The isolated protein of claim 3, wherein said immune response provides protection against a plurality of strains of *N. meningitidis*.

6. The isolated protein of claim 1 comprising twenty or more contiguous conserved amino acids.

7. The isolated protein of claim 6 comprising fifty or more contiguous conserved amino acids.

8. The isolated protein of claim 7 comprising one hundred or more contiguous conserved amino acids.

9. The isolated protein of claim 1, wherein the NhhA polypeptide has an amino acid sequence selected from the group consisting of SEQ ID NO: 1; SEQ ID NO: 2; SEQ ID NO: 3; SEQ ID NO: 4; SEQ ID NO: 5; SEQ ID NO: 6; SEQ ID NO: 7; SEQ ID NO: 8; SEQ ID NO: 9; and SEQ ID NO: 10.

10. An isolated protein comprising an amino acid sequence selected from the group consisting of:

(i) residues 1 to 50 of SEQ ID NO:11;

(ii) residues 109 to120 of SEQ ID NO:11;

(iii) residues 135 to198 of SEQ ID NO:11;

(iv) residues 221 to 239 of SEQ ID NO:11; and

(v) residues 249 to 604 of SEQ ID NO:11.

wherein said isolated protein is not a wild type NhhA polypeptide.

11. The isolated protein of claim 10, wherein the isolated protein has an amino acid sequence selected from the group consisting of:

(i) residues 1 to 50 of SEQ ID NO:1;
(ii) residues 1 to 50 of SEQ ID NO:2;
(iii) residues 1 to 50 of SEQ ID NO:3;
(iv) residues 1 to 50 of SEQ ID NO:4;
(v) residues 1 to 50 of SEQ ID NO:5;
(vi) residues 1 to 50 of SEQ ID NO:6;
(vii) residues 1 to 50 of SEQ ID NO:7;
(viii) residues 1 to 50 of SEQ ID NO:8;
(ix) residues 1 to 50 of SEQ ID NO:9;
(x) residues 1 to 50 of SEQ ID NO:10;
(xi) residues 125 to 188 of SEQ ID NO:1;
(xii) residues 125 to 188 of SEQ ID NO:2;
(xiii) residues 122 to 185 of SEQ ID NO:3;
(xiv) residues 127 to 190 of SEQ ID NO: 4;
(xv) residues 125 to 188 of SEQ ID NO:5;
(xvi) residues 132 to 195 of SEQ ID NO:6;
(xvii) residues 131 to 194 of SEQ ID NO:7;
(xviii) residues 131 to 194 of SEQ ID NO: 8;
(xix) residues 127 to 190 of SEQ ID NO:9;
(xx) residues 125 to 188 of SEQ ID NO:10;
(xxi) residues 211 to 229 of SEQ ID NO:1;
(xxii) residues 206 to 224 of SEQ ID NO:3;
(xxiii) residues 237 to 591 of SEQ ID NO:1;
(xxiv) residues 237 to 592 of SEQ ID NO:2;
(xxv) residues 235 to 589 of SEQ ID NO:3;
(xxvi) residues 239 to 594 of SEQ ID NO:4;
(xxvii) residues 237 to 591 of SEQ ID NO:5;
(xxviii)residues 244 to 599 of SEQ ID NO:6;
(xxix) residues 243 to 598 of SEQ ID NO:7;

(xxx) residues 243 to 598 of SEQ ID NO:8.

(xxxi) residues 239 to 594 of SEQ ID NO:9; and

(xxxii) residues 237 to 592 of SEQ ID NO:10.

12. The isolated protein of claim 10 further comprising one or more variable (V) region amino acids of an NhhA polypeptide.

13. The isolated protein of claim 11 having an amino acid sequence selected from the group consisting of: SEQ ID NO:23; SEQ ID NO:24, SEQ ID NO:25; SEQ ID NO:26; SEQ ID NO:27; SEQ ID NO: 33; SEQ ID NO: 34 SEQ ID NO: 35; SEQ ID NO: 36; SEQ ID NO: 37; SEQ ID NO: 38; and SEQ ID NO: 39.

14. An allelic variant of the isolated protein of claim 10.

15. A pharmaceutical composition comprising one or more isolated proteins according to claim 1 or 10.

16. The pharmaceutical composition of claim 15 which is a vaccine.

17. An isolated nucleic acid encoding the isolated protein of claim 1 or 10.

18. The isolated nucleic acid of claim 17 which has a nucleotide sequence selected from the group consisting of:

(i) residues 1 to 150 of SEQ ID NO:22;

(ii) residues 325 to 361 of SEQ ID NO:22;

(iii) residues 403 to595 of SEQ ID NO:22;

(iv) residues 661 to 717 of SEQ ID NO:22; and

(v) residues 745 to 1815 of SEQ ID NO:22.

19. The isolated nucleic acid of claim 17 which has a nucleotide sequence selected from the group consisting of SEQ ID NO:28; SEQ ID NO:29: SEQ ID NO:30; SEQ ID NO:31 and SEQ ID NO:32.

20. An expression vector which includes the isolated nucleic acid of claim 17.

21. A host cell transformed with the expression vector of claim 20.

22. The host cell of claim 21 which is a bacterium

23. The host cell of claim 22 which is *Neisseria meningitidis*.

add B1

add C15

add D1